

National Institutes of Health Office of Technology Transfer



Imaging-related Technologies Available for Licensing

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INTRODUCTION

NIH has an extensive intellectual property portfolio of early-stage technologies¹ and also invests substantially in their development. Roughly 10 percent of the annual NIH budget is dedicated to intramural research and development activities -- resulting in inventions that form the basis of a variety of new medical technology and therapies in the areas of medical devices, software, vaccines, diagnostics, and reagents. Similar to university research, commercial partners are needed to make sure that the long hours at the lab bench and the public investment pay off in the end in marketed products.

NIH believes that innovative, early stage companies can play a significant role in the future development of leading-edge research. While the increasingly consolidated pharmaceutical industry remains a steady customer of research reagents and clinical collaborations with NIH, the more exciting therapeutic developments increasingly seem to come from NIH licenses signed with small and medium-sized life science companies early in their growth phase.

To further attract such early-stage concerns and start-ups, NIH affords creative treatment to small firms and tries to provide IP agreements that facilitate new areas of product development based upon NIH research. For example, financially-burdened smaller companies can benefit from flexibility on patent costs and license execution fees in license agreements. Of particular note for venture-backed firms is that companies do not give up equity or management control nor are their future development or marketing rights compromised by signing NIH license agreements. Finally, once the product is in development, NIH has the capability to assist with clinical trials, follow-on research collaborations, and even eventual purchase of the product as a customer.

We have collected some medical technologies your company might be interested in for further discussion with our licensing managers.

Once you have picked the technology of interest, we urge you to apply for a License. A copy of the License Application template can be found at the NIH OTT website at: http://www.ott.nih.gov/forms_model_agreements/forms_model_agreements.aspx

¹ *The NIH Office of Technology Transfer cannot guarantee that the listed technologies are still available for licensing. Please contact the Licensing and Patenting Manager (listed under each technology) for the current status and for other complementary technologies.*

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MRI: Software and Enhancements

Ref No.	Title
E-164-2006	Tomographic Reconstruction Of The 3-D "average Propagator" From Diffusion Weighted MR Data Using An Iterative Scheme
E-237-2003	Fisptrain: A High Signal Magnetic Resonance Imaging (MRI) Sequence With Steady-state Free Precession And Intrinsic Fat Suppression
E-079-2003	DT-MRI And Considerations Of Water Diffusion
E-079-2002	Suppressing unencoded MRI signal contributions via RF inversion pulses in multi-phase myocardial tagging and multi-phase phase-contrast
E-077-2002	Methods for Improving Sensitivity and Reducing False Positive Detections in Colonography Computer Aided Detection
E-082-2001	Real-Time, Interactive Volumetric Magnetic Resonance Imaging
E-200-2000	Accelerated Magnetic Resonance Imaging
E-198-2000	Ghost Artifact Cancellation Using Phased Array Processing
E-234-1999	Fast Displacement Encoding With Stimulated Magnetic Resonance Echoes By Sampling Both Components Of A Stimulated Echo
E-229-1999	Vessel Delineation in Magnetic Resonance Angiographic Images

E-192-1999	<u>System for Analyzing Diffusion Tensor Magnetic Resonance Images</u>
E-240-1998	<u>Method for Enhancing Contrast in Images Produced by Magnetic Resonance Imaging</u>
E-013-1999	<u>Magnetic Resonance Tracking of Magnetically Labeled Cells</u>
E-134-2005	<u>Method For Imaging And Reconstruction Of Partial Field Of View Phase Contrast MRI</u>
E-073-2005	<u>Method For Specifically Selective B1 Insensitive T2 Preparation Contrast Enhancement For High Field Magnetic Resonance Imaging</u>
E-164-2002	<u>MRI NAVIGATOR METHODS AND SYSTEMS</u>
E-361-2001	<u>A Method and Apparatus to improve an MRI Image</u>
E-231-2005	<u>In Vivo Magnetic Resonance Spectroscopy Of Transaminase Activities</u>
E-073-2005	<u>Method For Specifically Selective B1 Insensitive T2 Preparation Contrast Enhancement For High Field Magnetic Resonance Imaging</u>
E-079-2003	<u>Non-Invasive in vivo MRI Axon Diameter Measurement Methods</u> <u>Bottom of Form</u>
E-009-2010	<u>Signal-to-Noise Enhancement in Imaging Applications Using a Time-Series of Images</u>

MRI: Hardware and Instrumentation

E-298-2008	MRI Coil Holder for Both Dynamic and Static Imaging of Joints
E-020-2007	Multilayered RF Coil System for Improving Transmit B1 Field Homogeneity in High-Field MRI
E-276-2008	Magnetic Resonance Specimen Evaluation Using Multiple Pulse Field Gradient Sequences
E-314-2006	Increased Image Quality for Early Colon Polyp Detection
E-273-2007	Magnetic Resonance Imaging Methods and Systems for Estimating Cone of Uncertainty
E-209-2007	Active Guidewire Visualization Device and System for MRI Guided Interventions
E-298-2008	MRI Coil Holder for Both Dynamic and Static Imaging of Joints
E-273-2007	Magnetic Resonance Imaging Methods and Systems for Estimating Cone of Uncertainty
E-048-2009	A Locking Device for Permanently Securing Surgical Suture Loops
E-099-2006	Inductive Decoupling Of Multiple RF Coils Using Passive Transformers
E-298-2005	Active MRI Compatible And Visible IMRI Catheter With A Wireless Solution

E-243-2005	Susceptibility-matched Plates For High-throughput Screening By Magnetic Resonance Imaging And Spectroscopy
E-134-2001	Lever-Coil Sensor For Respiratory And Cardiac Motion

Ultrasound Imaging: Methods; Hardware; and Therapeutic Agents

Ref No.	Title
E-311-2004	Glucopyranoside Molecules With Surface Active Properties Completely Protect Cells From Ultrasound Induced Cytolysis Over A Broad Range Of Ultrasound Frequency And Intensity Conditions
E-091-2004	Ultrasonic Waves With Nanovessels Or Tethered Nanotube/monoclonal Antibody Composites For Cancer Therapy
E-186-2000	Radio-Frequency Probes For Tissue Treatment and Methods of Use
E-017-1998	SHIELDED ULTRASOUND PROBE
E-067-1996	ULTRASOUND-HALL EFFECT IMAGING SYSTEM AND METHOD
E-241-1998	Electroacoustic Imaging Methods and Apparatus
E-107-2005	A Hybrid Gadolinium-labeled Dendrimer Nano-particle For Sentinel Node Imaging And Therapy Of Cancer Metastasis

Computer Aided Detection: Software; Methods; and Applications

Ref No.	Title
E-314-2006	Increased Image Quality for Early Colon Polyp Detection
E-084-2006	Teniae Coli Guided Navigation and Registration for Virtual Colonoscopy
E-089-2003/0	A Parameterized Model for Simulating Microarrays
E-021-2007	Automated Method for Rapid Detection of Sickle Cell Disease Inhibitors
E-189-2009	Interactive Venn Diagram Software Designed for Microarray Analysis
E-164-2006	Tomographic Reconstruction Of The 3-D "average Propagator" From Diffusion Weighted MR Data Using An Iterative Scheme
E-078-2002	Refinement if Isointensity Surfaces
E-077-2002	Methods for Improving Sensitivity and Reducing False Positive Detections in Colonography Computer Aided Detection
E-229-1999	Vessel Delineation in Magnetic Resonance Angiographic Images
E-351-2003	Automatic Colonic Polyp Segmentation Using Deformable Models For CT Colonography Computer-Aided Detection
E-174-2003	Automated Recognition Of The Ileocecal Valve For CT Colongraphy Computer-Aided Detection
E-079-2003	Fourier X-ray Scattering and Phase-Contrast Imaging: Enhanced Contrast and Sensitivity of X-ray Images

Electron Paramagnetic Resonance Imaging: Methods and Hardware

Ref No.	Title
E-040-2009	Simple Biosensors Based on Electrical Percolation Biological Semiconductors

E-250-2008	In Vivo Quantitative Tissue Oxygen Imaging Using Pulsed Time-Domain Electron Paramagnetic Resonance - Echo-based Single Point Imaging (ESPI)
E-221-2005	Fast Electron Paramagnetic Resonance Imaging (EPRI) Using CW CPR Spectrometer With Sinusoidal Rapid-scan And Digital Signal Processing
E-166-1997	RESONANT STRUCTURE FOR SPATIAL AND SPECTRAL-SPATIAL IMAGING OF FREE RADICAL SPIN PROBES USING RADIOFREQUENCY TIME DOMAIN ELECTRON...

Optical Imaging: Methods; Hardware; and Therapeutic Agents

Ref No.	Title
E-056-2007	Microarray Binding Sensors Using Carbon Nanotube Transistors
E-281-2007	Multicolored Fluorescent Cell Lines for High-Throughput Angiogenesis and Cytotoxicity Screening
E-084-2006	Teniae Coli Guided Navigation and Registration for Virtual Colonoscopy
E-015-2006	All-hollow-waveguide Laser Delivery System For Digital Particle Image Velocimetry
E-257-2005	Wide-area Fluorescence Detection System For Two-photon Microscopy
E-223-2005	A Spatially Selective, Fixed Optics Multicolor Fluorescence Detection System For A Multichannel Plastic Microfluidic Device
E-098-2005	Image Guided Method And Device For Assessment Of Viability Of The Donor Organs During Resuscitation
E-161-2009	Non-Contact Total Emission Detection Methods for Multiphoton Microscopy: Improved Image Fidelity and Biological Sample Analysis
E-057-2010	Polarization Adapter for Colposcope

E-253-2009	Composite Probes and Use Thereof in Super Resolution Microscopy
E-290-2009	Laser Scanning Microscopy for Three Dimensional Motion Tracking for Volumetric Data

Imaging Contrast Agents: PET/SPECT; MRI; and Optical

Ref No.	Title
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PET/SPECT

E-086-2007	An Imaging Radiotracer for the Noninvasive Detection of HER2-positive Tumors
E-318-2007	Radiotracers for Imaging P-glycoprotein Transporter Function
E-254-2007	Mucin Binding Lectin Imaging Agents for Colonic Polyp Imaging
E-099-2009	Device and Method for Direct Measurement of Isotopes of Expired Gases: Application in Research of Metabolism and Metabolic Disorders, and in Medical Screening and Diagnostics
E-194-2007	Tri-functional Imaging Agent for Monoclonal Antibody Tumor-Targeted Imaging
E-156-2006	Beta-amyloid PET Imaging Agents Based On Thioether Derivatives
E-317-2004	Synthetic Metal Ion Chelating Amino Acid Suitable For Use In Solid Phase Peptide Synthesis
E-078-1995	4' AND 4',4' -SUBSTITUTED-3ALPHA-(DIPHENYLMETHOXY) TROPANE ANALOGS AS COCAINE THERAPEUTICS
E-046-2006	Small Molecules For Imaging Protein-protein Interactions In Alzheimer's Disease
E-236-2009	Mouse Monoclonal Antibody Targeting Tetanus Toxin Heavy Chain Fragment C

MRI	-
E-063-2008	Nanoparticles for Imaging and Treatment of Brain Tumors
E-207-2009	Superior Method of Preparing Dendrimers for Use as Magnetic Resonance Imaging (MRI) Contrast Agents
E-249-2008	A Phantom for Diffusion MRI: A Method of Enhancing Performance and Reliability
E-207-2009	Superior Method of Preparing Dendrimers for Use as Magnetic Resonance Imaging (MRI) Contrast Agents
E-016-2009	Broadly Applicable Modules for Improved Expression and Detection of Membrane Proteins
E-214-2009	Osmogels: A New Method for Stabilizing Weak Molecular Complex Interactions
E-258-2005	Nitroxide Based Functional MRI Contrast Agents For Diagnosis And Therapy In Cancer And Other Pathologies Associated With Oxidative Stress
E-291-2004	Charge Neutralized Complexes Of Paramagnetic Metals As An Intracellular MAR Contrast Media For Imaging Tumor Angiogenesis And Vascular Plaques
E-338-2003	Lymphatic Draining Imaging Of Breast Cancer In Mice By Micro-Magnetic Resonance Mammo-Lymphangiography Using A Dendrimer-based Contrast Agent
E-035-2002	Backbone Substituted Bifunctional DOTA Ligands And Complexes thereof
E-240-2001	Macromolecular Imaging Agents For Liver Imaging
E-151-2002	METHOD FOR FUNCTIONAL KIDNEY IMAGING USING SMALL DENDRIMER CONTRACT AGENTS
E-258-2005	Nitroxide Based Functional MRI Contrast Agents For Diagnosis And Therapy In Cancer And Other Pathologies Associated With Oxidative Stress

E-202-2002	METHOD FOR CONVECTION ENHANCED DELIVERY OF THERAPEUTIC AGENTS
Optical	-
E-255-2006	Optical Imaging Compounds
E-157-2007	Nanoparticles For Imaging: Targeted Nanoparticles That Can Be Imaged Through Magnetic Resonance, Optical, And Radioisotope Imaging
E-061-2009	BODIPY®-FL Nilotinib (Tasigna®) for Use in Cancer Research
E-248-2009	Reversible SNAP-Tag and CLIP-Tag Ligands for Live Cell Imaging